

Work Order ID 136028

Thursday, August 27, 2015 8:49:07 AM

136028

Page 1

Item ID: D350-748-141TRN

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Crosstube Turning Detail

Stop

NS2

Start Date: 8/27/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/27/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals:

Process Plan: ML5

Date: AUG 27 2015

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D350-748-141	H								

100

0.00

100

MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.02

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs on both ends as per Folio FA648
2-Turn first side as per Folio FA648
3- File transition lines smooth.
FOLIO REV: AA
DWG REV: AA

1 ϕ mm
15/10/15

110

QC1- Inspection performed by CMM

0.00

110

QC

Memo

0.00

Quality Control

1 ϕ mm
15/10/15

Work Order ID 136028

Thursday, August 27, 2015 8:49:07 AM

136028

Page 2

Item ID: D350-748-141TRN

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Turning Detail

Stop ***NS2***

Start Date: 8/27/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/27/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***
Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

120

120

Mori Seiki

Mori Seiki CNC Lathe Large

MORI SEIKI CNC LATHE LARGE

Memo

1-Turn second side as per Folio FA648
2- File transition lines smooth.
3-Scribe Part & Batch as per Dwg D350-748-141
FOLIO REV: AA
DWG REV: H

0.00

0.04

1 $\emptyset$ manly
15/10/20

130

130

QC

Quality Control

QC1- Inspection performed by CMM

Memo

0.00

0.00

1 $\emptyset$ manly
15/10/20

140

140

QC

Quality Control

QC8- Inspect parts - second check

Memo

0.00

0.00

1 $\emptyset$ **DAS**
47
9.89
15-10-22

Work Order ID 136028

Thursday, August 27, 2015 8:49:07 AM

136028

Page 3

Item ID: D350-748-141TRN

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Turning Detail

Stop ***NS2***

Start Date: 8/27/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/27/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Run Start ***NR1***Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

150

0.00

150

Large Fab

Crosstubes

Memo

0.01

Crosstubes

1-DRILL HOLES FOR HEAT TREAT USING DT9806(HOLES MUST BE
ALIGNED ON SAME LINE ON BOTH CUFFS)

2-Grind machining marks

TW 15-10-26

160

Outsource process - Heat Treat

0.00

160

Outsource1

Memo

0.20

Outsource process - Heat Treat

Issue P/O: **30292**
Heat Treat to min 180 KSI As per Dwg D350-748-141
(MIL-T-6736 OR AMS 2759-1C)

***Check for straighten and ensure parts are straight within 1/8" as per dwg ***

Sand Blast tube after Heat Treat

Possible Supplier: Vac Aero

Ensure Certificate of Conformity is attached and Metlab process spec form

CZ OCT 27 2015 1

Work Order ID 136028

Thursday, August 27, 2015 8:49:07 AM

136028

Page 4

Item ID: D350-748-141TRN Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Crosstube Turning Detail
Start Date: 8/27/2015 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 8/27/2015 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	Receive & Inspect for Damage & Mat'l Certs	0.00							
170									
Packaging	Memo	0.00							
Packaging	Ensure certificate of conformaty is attached								
180	QC6- Inspect dimensions to drawing	0.00							
180									
QC	Memo	0.00							
Quality Control									
	Length 112.500 RW 43								
	Side A Middle Side B								
	2. 254 2. 346 2. 349								
	2. 253 2. 344 2. 353								
190	Packaging	0.00							
190									
Packaging	Memo	0.00							
Packaging	Identify and stock in kanban rack								
	Location: HALL								

12 SP 15-12-07

DAS
38
9-89
DEC 08 2015

TW 15-12-08

Work Order ID 136028***136028***

Page 5

Thursday, August 27, 2015 8:49:07 AM

Item ID: D350-748-141TRN

Accept

N900040100Setup Start ***NS1***

Revision ID:

Item Name: Crosstube Turning Detail

Stop ***NS2***

Start Date: 8/27/2015 Start Qty: 1.00

1

Cust Item ID:

Required Date: 8/27/2015 Req'd Qty: 1.00

1

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursTool ID Tool # Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

200

QC21- Final Inspection - Work Order Release

0.00

200

QC

Memo

0.00

Quality Control

MLJ

DEC 08 2015

SH 20151208

Picklist Print

Thursday, August 27, 2015 8:49:11 AM

Page 1

Work Order ID: 136028

136028

Parent Item: D350-748-141TRN

D350-748-141TRN

Parent Item Name: Crosstube Turning Detail

Start Date: 8/27/2015

Required Date: 8/27/2015

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev:A New Issue 08-03-06 DD verified by:ec
IPP Rev B Removed polish 08.04.02 EC verified by : DD
IPP Rev C Remove LPS-3 08.06.23 EC verified by DD IPP Rev C
11.02.24 as per dwg rev.F DD verf: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6015-125		Manufactured	No			110	Each	91.0000	1	1			

D6015-125

Crosstube Material

Location

Loc Qty

Loc Code

HALL

91

113255

11

128725

80

1 mmml 15/10/13

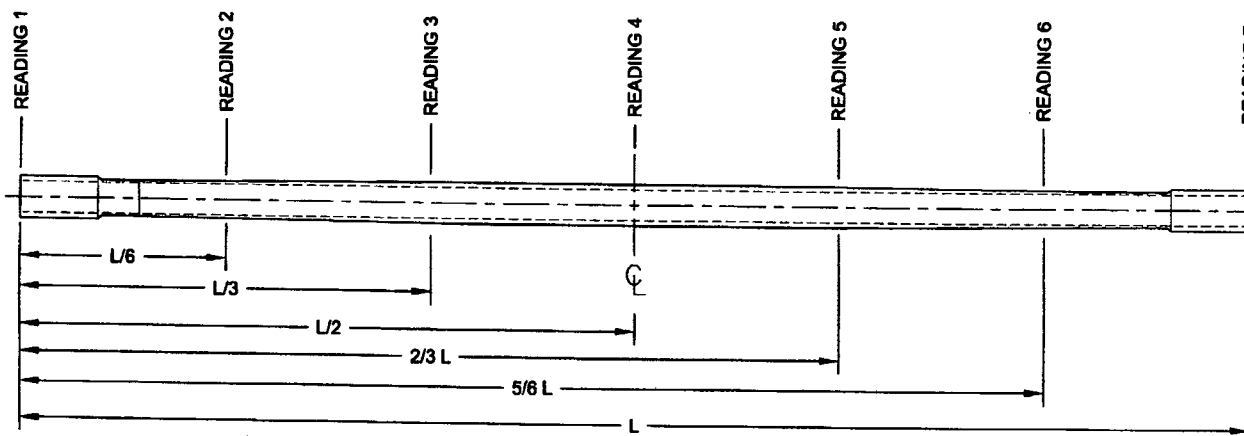
DART AEROSPACE LTD		Work Order: 136028
Description: Crosstube Assembly (AS350/355 High Fwd)		Part Number: D350-748-141
Inspection Dwg: D350-748-141 Rev: H		Page 1 of 2

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+0.005/-0.000	2.244	-	vern	CNC-05
	2.180	+0.005/-0.000	2.184	-	↓	
	2.180	+0.005/-0.000	2.183	-		
	2.237	+0.005/-0.000	2.240	-		
	2.272	+0.005/-0.000	2.274	-		
	2.306	+0.005/-0.000	2.308	-		
	2.339	+0.007/-0.000	2.342	-		
	2.339	+0.007/-0.000	2.343	-		
	0.062	+/-0.010	0.062	-	vern	CNC-08
	5.25	+/-0.060	5.26	-	II	
	R0.063	+/-0.010	0.063	-	EG	
	R0.50	+/-0.030	0.500	-	II	
	2.240	+0.005/-0.000	2.243	-	vern	CNC-06
	2.180	+0.005/-0.000	2.184	-	↓	
SIDE B	2.180	+0.005/-0.000	2.182	-		
	2.237	+0.005/-0.000	2.240	-		
	2.272	+0.005/-0.000	2.273	-		
	2.306	+0.005/-0.000	2.308	-		
	2.339	+0.007/-0.000	2.344	-		
	2.339	+0.007/-0.000	2.343	-		
	0.062	+/-0.010	0.062	-	vern	CNC-05
	5.25	+/-0.060	5.26	-	II	
	R0.063	+/-0.010	0.063	-	EG	
	R0.50	+/-0.030	0.500	-	II	
	112.27	+/-0.060	112.27	-	tape	LC-71

DART AEROSPACE LTD		Work Order: 136028
Description: Crosstube Assembly (AS350/355 High Fwd)		Part Number: D350-748-141
Inspection Dwg: D350-748-141 Rev: H		Page 2 of 2

WALL THICKNESS MEASUREMENT



Location	WALL THICKNESS MEASUREMENT (IN)				Deviation Δw (max-min)	TOLERANCE
	w1	w2	w3	w4		
READING 1 L=0"	.123	.120	.134	.135	.015	0.030"
READING 2 L=19	.133	.127	.135	.138	.011	
READING 3 L=37	.184	.175	.175	.182	.009	
READING 4 L=56	.178	.176	.176	.175	.003	
READING 5 L=75	.178	.176	.178	.179	.003	
READING 6 L=93	.148	.126	.118	.136	.030	
READING 7 L=112	.137	.123	.122	.134	.015	

Calibration Result

Actual Block Thickness: .106 8500

SITESCAN 250 Measured Thickness: .100 .560

DAS
47

Measured by: <i>mm</i>
Date: 15/10/20

Audited by: 9-89
Date: 15-10-22

Preliminary Approval:
Date:

Rev	Date	Change	Revised by	Approved
C	11.01.20	Dwg Rev updated (P/O D350-748-101)	KJ	
D	11.07.26	Tolerance revised for 2.339 dimensions	KJ	
E	12.06.04	Wall thickness form added	KJ	
F	13.05.08	Dimension 112.27 was 110.27	KJ	
G	14.04.25	5.25 dimension revised to 5.25	KJ	
H	15.04.14	Dwg Rev updated	KJ	

Item	Qty	Part Number	Description
	-141		
1	X	D350-748-141	CROSSTUBE ASSEMBLY (AS 350/355 HI FWD)
2	1	D6015-125	CROSSTUBE (OR D6017-115)
3	2	D3502-1	SUPPORT
4	2	D5123-7	CLAMP CUSHION
5	1	AELS-1032-225	INSERT
6	1	NAS1149D0363J	WASHER (OR AN960JD10)
7	2	MS21920-20	CLAMP (OR MS21920-21/-22, PER DART SPEC. M-MS21920-20/-21/-22)
8	1	MS27039-1-10	SCREW
9	A/R	PROSEAL 890 B-2	SEALANT, AMS-S-8802 CLASS B-2

GENERAL NOTES:

- MATERIAL: MANUFACTURED FROM D6015-125 OR D6017-115
FINISHED LENGTH AFTER TURNING = 112.270±0.06 (AFTER BENDING/TRIMMING = 110.27 REF)
- FINISH: MAGNETIC PARTICLE INSPECT PER DART QSI 038 4.2
CADMIUM PLATE PER AMS-QQ-P-416B, CLASS 1, TYPE II
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- TOLERANCE: PER DART QSI 018 UNLESS OTHERWISE NOTED.
WALL THICKNESS ECCENTRICITY PER DART QSI 038 7.2
MIN. ALLOWABLE WALL IS -0.020 FROM NOMINAL
- UNITS: INCHES UNLESS OTHERWISE NOTED.
- BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- IDENTIFICATION: DART PART NUMBER "D350-748-141" AND BATCH NUMBER ON INSIDE OF CUFF
PER DART QSI 044 6.4 (VIBRATING STYLUS)
- WEIGHT: 30.45 lbs
- PART IS SYMMETRIC ABOUT CENTERLINE, EXCEPT FOR Ø.297 HOLE.
- EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.

TURNING

- BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITION SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- HEAT TREAT TO MIN. 180 KSI PER MIL-T-6738 OR AMS2759/1E AFTER TURNING. ACCEPTABLE TO VERIFY TENSILE STRENGTH BY HARDNESS TEST PER ASTM E18 TO 40-45 HRC.

BENDING

- ALL DIMENSIONS FOR BENT TUBE ARE POST STRESS RELIEF
- BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES PER SIDE. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D. ON TOP HALF OF BEND, AND 8% ON BOTTOM HALF OF BEND.
- MAX AMPLITUDE OF RIPPING ALONG BENT PORTION OF THE TUBE IS 0.030 (ZN A1-3)
- AFTER BENDING, STRESS RELIEVE TUBE AT 650°F ±0.25°F FOR A MINIMUM OF 2 HRS AND ALLOW TO COOL TO AMBIENT TEMPERATURE (REF AMS2759/1E).
- MAX TWIST AFTER STRESS RELIEF: WITH XTUBE LAYED FLAT ON SURFACE, THE DIFFERENCE BETWEEN CUFF HEIGHTS FROM THE SURFACE MAY BE NO LARGER THAN 0.38 (ZN C1-3).

ASSEMBLY

- TO INSTALL D3502-1 SUPPORT: ABRASE MATING SURFACE OF SUPPORT AND CROSSTUBE WITH 180-GRIT SANDPAPER AND REMOVE RESIDUE WITH MEK (OR EQUIVALENT). APPLY A 0.02" TO 0.05" THICK LAYER OF PROSEAL 890 CLASS B-2 (OR AMS-S-8802 CLASS B-2) SEALANT TO MATING SURFACE OF SUPPORT.
- TORQUE CLAMPS 60 TO 80 IN.-LB. ENSURE AT LEAST 1.5 THREADS SHOWING IN SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING. PRIOR TO PACKAGING, RE-CHECK TORQUE ON CLAMPS AFTER PROSEAL 890 SEALANT HAS CURED FOR 72 HOURS.

136028 MJS
150827

RELEASED

2015 MAR 18

9th EN 15-597

H	D5123-7 WAS D3505-063-395, MS21920-20 WAS -22, ALLOWABLE CRUSHING NOW 8% WAS 7%	CP	15.02.25
G	RMV ABRASION STRIP, SUPPORT NOW W/ PROSEAL & CUSHION, ADD STRESS RELIEF, LONGER CUFF, NOW TRIM'D AFTER BEND, ADD WALL DIMS & UPDATE TOL	CP	12.08.12
F	ADD HRC TEST OPTION (B8-1) PER PAR 09-040, ADD TWIST LIMIT (A8-1, C1-3), ADD D6015-125 OPTION (C8-1), STOCK DIM NOW MACHINED (D1-4)	CP	10.11.23
E	REVISE GENERAL NOTES; UPDATE TO CURRENT ADD STANDARDS; RELOCATED FLAG #6 PER PAR 08-046 (ZN A6-3); TOLERANCES (ZN C6-3, D1-3)	RF	09.09.30
D	MAG. PARTICLE AND CAD PLATE AS MFD.	CP	06.10.31
C	ADD CAD PLATING	CP	06.08.14
B	ADD D6017-115 & PRIME AND PAINT	CP	06.06.30
A	NEW ISSUE	CP	06.03.31
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED	AS		
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	15.02.25		
DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA DRAWING NO. D350-748-141 SHEET 1 OF 4 TITLE CROSSTUBE (AS 350/355 HI FWD) SCALE NTS COPYRIGHT © 2005 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			

8 7 6 5 4 3 2 1

D

C

B

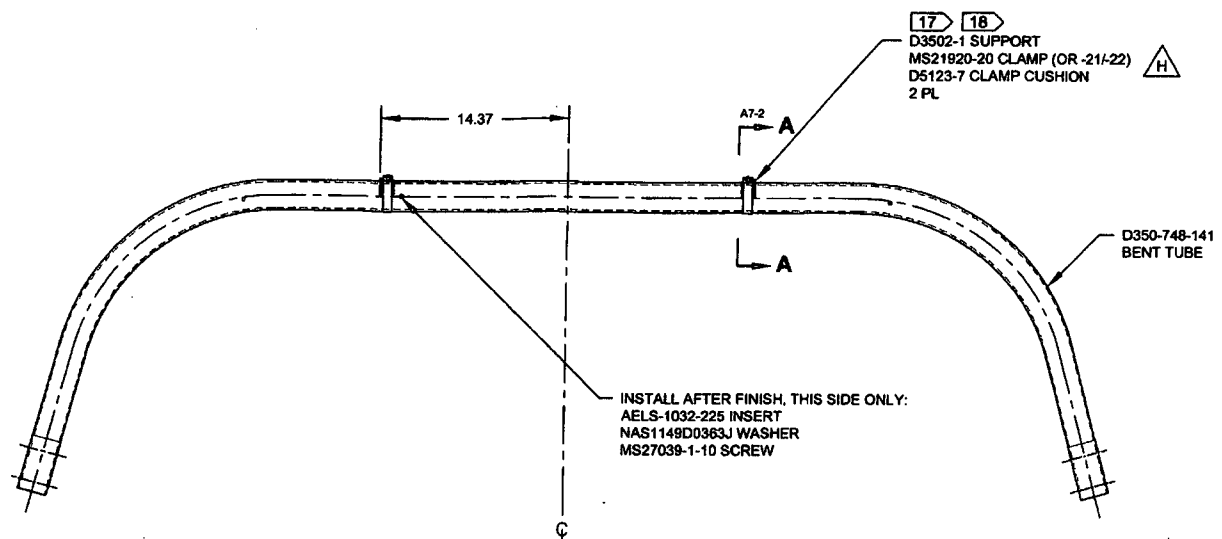
A

D

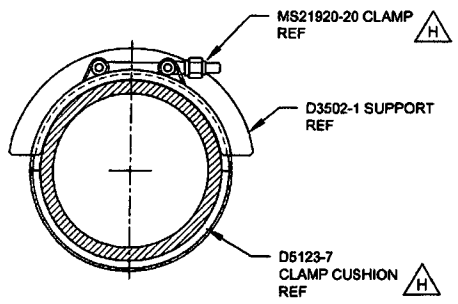
C

B

A



**D350-748-141
ASSEMBLY DETAIL**

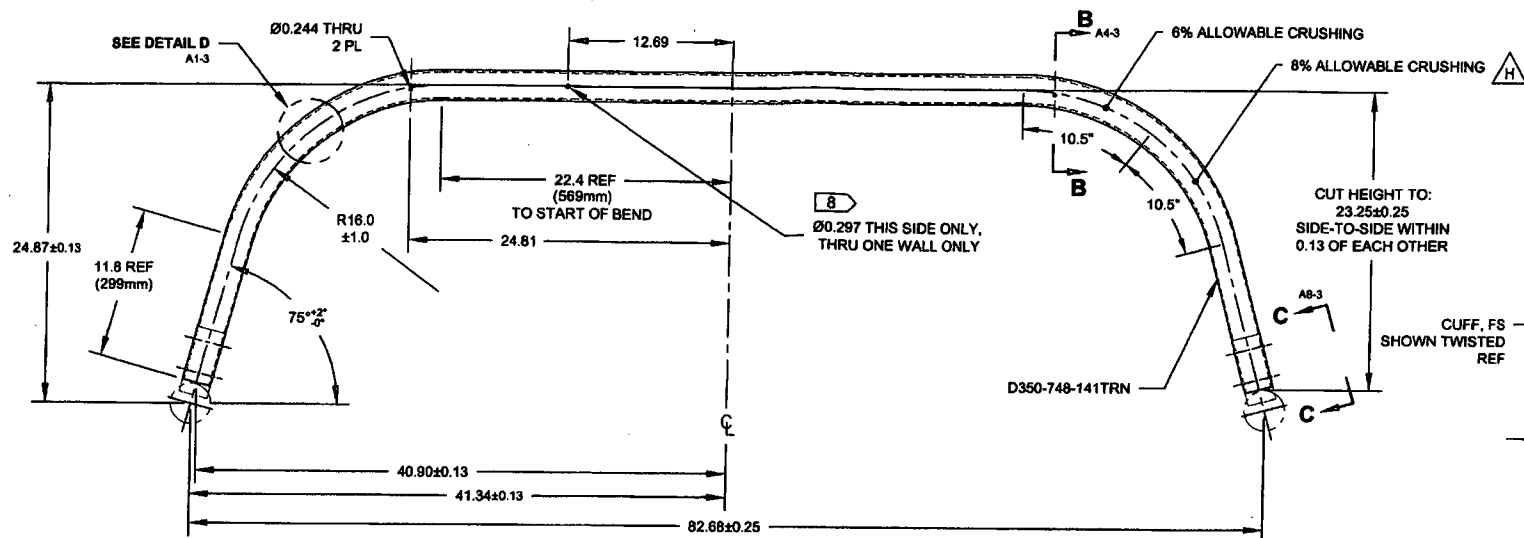


SECTION A-A D4-2
SCALE 6X

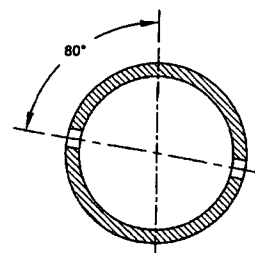
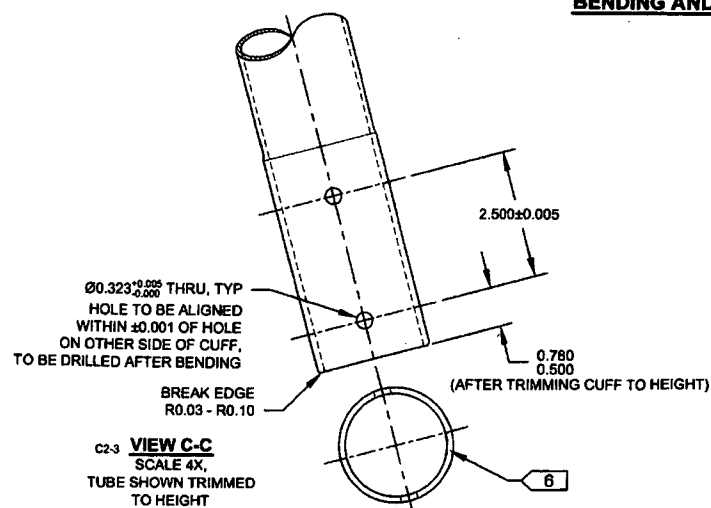
RELEASED
2015 MAR 18

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. H
MFG. APPR.		D350-748-141	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	15.02.25	COPYRIGHT © 2006 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR ON OPD OR COMMANDED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

8 7 6 5 4 3 2 1



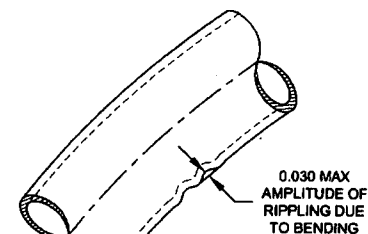
D350-748-141
BENDING AND DRILLING DETAIL 13



SECTION B-B D3-3
SCALE 6X

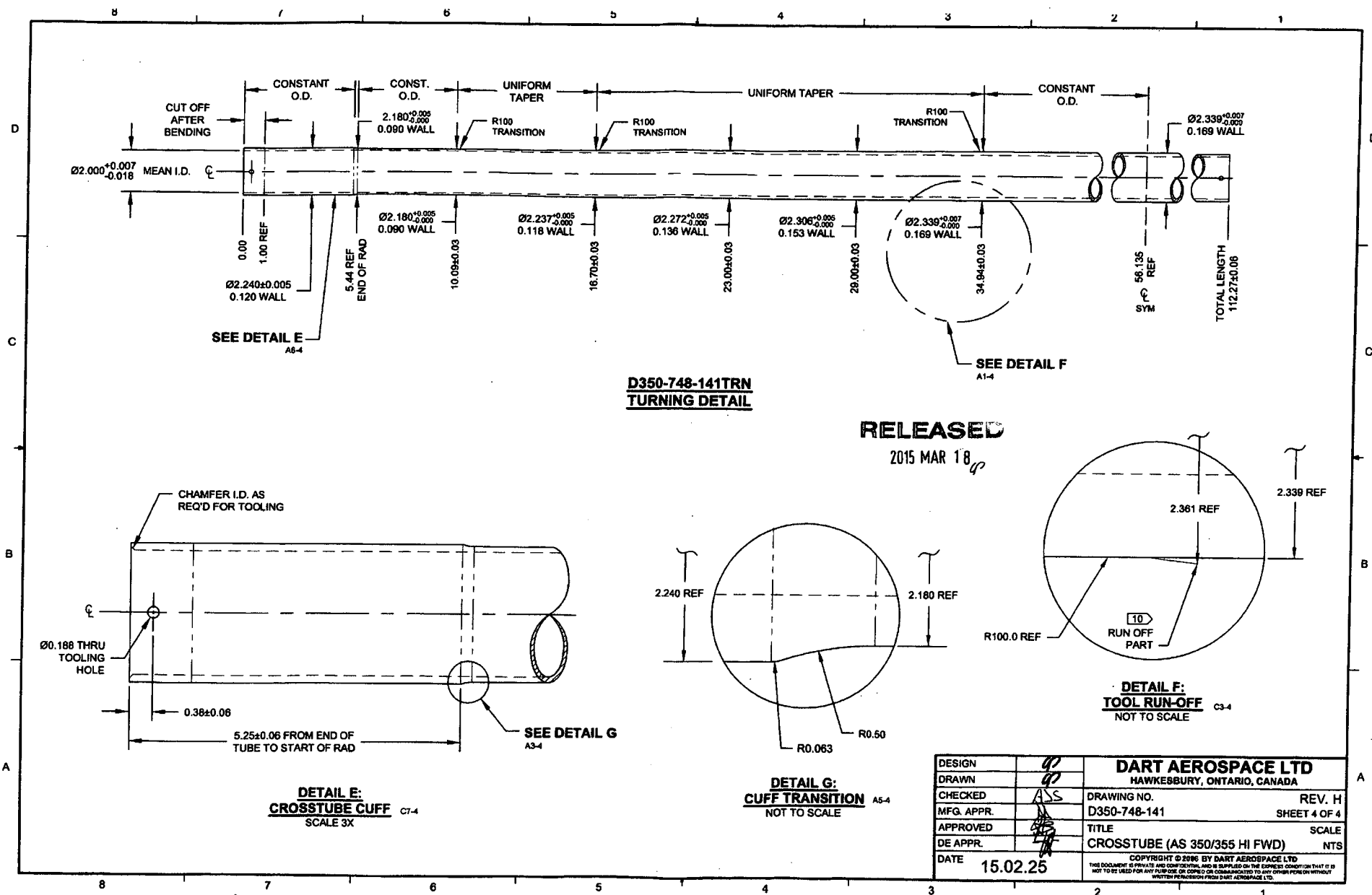
RELEASED

2015 MAR 18



DETAIL D D7-3
SCALE 4X
RIPPING EXAGGERATED

DESIGN	99	DART AEROSPACE LTD	
DRAWN	99	HAWKESBURY, ONTARIO, CANADA	
CHECKED	AS	DRAWING NO.	REV. H
MFG. APPR.		D350-748-141	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE (AS 350/355 HI FWD)	NTS
DATE	15.02.25	COPYRIGHT © 2006 BY DART AEROSPACE LTD	
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.			



DART
AEROSPACE

Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER**Purchase Order ID PO30292****Purchase Order Date 10/27/2015****PO Print Date 10/27/2015****Page Number 4 of 6****Order From :**

VU-MET001

Ship To : DART AEROSPACE LTD

1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

METLAB
1000 E. MERMAID LANE
WYNDMOOR, PA 19038
USA

Contact Name**Vendor Phone** 215-233-2600**Ship To Contact****Ship To Phone****Ship Via:** Journey Freight collect**Ship Acct:**

7 136028

D350-748-141TRN
CROSSTUBE

11/18/2015

Yes

11/18/2015

HEAT TREAT TO MIN. 180 KSI
AS PER MIL-T-6736 OR AMS 2759-1C
SAND BLAST TUBE AFTER HEAT TREAT

NOTE: CHECK FOR STRAIGHTEN AND ENSURE PARTS ARE
STRAIGHT WITHIN 1/8" AS PER DWG

Buyer

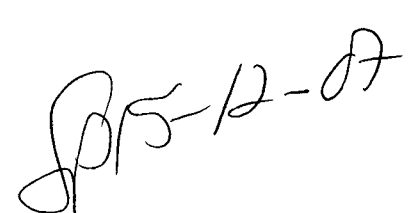
Chantal Lavoie

Customer POID**Customer Tax #** 10127-2607**Terms** Net 30**Currency** USD**FOB** FCA - (Free Carrier)

1.00

\$205.00

\$205.00

**Line Total:****\$205.00**

8 136029

D350-748-141TRN
CROSSTUBE

11/18/2015

Yes

11/18/2015

HEAT TREAT TO MIN. 180 KSI
AS PER MIL-T-6736 OR AMS 2759-1C
SAND BLAST TUBE AFTER HEAT TREAT

NOTE: CHECK FOR STRAIGHTEN AND ENSURE PARTS ARE
STRAIGHT WITHIN 1/8" AS PER DWG

1.00

\$205.00

\$205.00

Line Total:**\$205.00****Note:**

10/27/2015

METLAB
1000 E. MERMAID LANE
WYNDMOR, PA 19038

Packing List

Sales Order Number:

89796

Sales Order Date

Nov 4, 2015

Page:

1

Voice: 215-233-2600
Fax: 215-233-5653

Sold To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

Ship To:
DART AEROSPACE
1270 ABERDEEN STREET
HAWKESBURY, ON K6A 1K7
CANADA

Customer ID	PO Number	Payment Terms
DARA	PO30292	Net 30 Days
Ship Via	Process	
CALL CUSTOMER	HT	

Quantity	Item	Description	Total Shipped	This Shipment
8.00		8 PCS. D350-748-141TRN CROSSTUBE HEAT TREAT TO MIN, 180 KIS PER MIL-T-6736 OR AMS 2759-1C SANDBLAST AFTER HT CHECK STRAIGHTNESS, STRAIGHT WITHIN 1/8" PER DWG 260 POUNDS TOTAL		
1.00	CERT.		DEC 07 2015	DAS 26 9-89

COMMENTS

Henry Hoehn
SHIPPED BY, SIGNATURE
METLAB

11/30/15
DATE

RECEIVED BY, SIGNATURE
DART AEROSPACE

DATE



1000 E. Mermald La., Wyndmoor (Phila.) PA 19038-8093
Tel. (215) 233-2600 Fax (215) 233-5653

Certification

SOLD TO

Dart Aerospace
1270 Aberdeen Street
Haekesbury, ON K6A 1K7
Canada

November 25, 2015

Metlab Shop Order:	89796
Purchase Order:	PO30292
Description:	D350-748-141TRN Crosstube
Part No:	B136022, B136023, B136025, B136026, B136027, B136028, B136029
Quantity:	8 Pieces
Weight:	260 Pounds Total
Material:	4130 Alloy Steel
Specifications:	Harden and temper to 180 KSI minimum ultimate tensile strength per AMS 2759-1C

DEC 17 2015

DAS
26
8-88

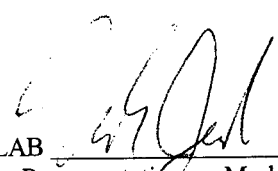
This is to certify that the above parts were processed as indicated above and conform to the specification requirements.

Results:

Ultimate Tensile Strength: 208/238 KSI*

Surface Hardness: 44/48 HRC

*Approximated from surface hardness

METLAB
Quality Representative  Mark Jenkins

MERCURY CONTAMINATION: During the heat treating process, testing and inspections, the product did not come in direct contact with mercury or any of its compounds nor with any mercury containing device.mj



Heat Treating and Metallurgical Consulting

